

Work Order ID 139980

Wednesday, December 16, 2015 9:09:02 AM

139980

PRELIMINARY ISSUE
DAS 9-89

Page 1

Item ID: D5374-1

Accept

N900040100

Setup Start

NS1

Revision ID: PRELIM

POSITIVE
RECALL

Stop

NS2

Item Name: Bushing

Start Date: 12/16/2015 Start Qty: 20.00

20

Cust Item ID:

Required Date: 12/16/2015 Req'd Qty: 20.00

20

Customer:

Reference:

Approvals: Process Plan: ML3

Date: DEC-16-2015

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D5374	PA2 <u>Rev A</u>

100	Hardinge CNC LATHE SMALL	0.00
100		
Hardinge	Memo	0.01
Hardinge CNC Lathe Small	1-TURN AS PER FOLIO FB445 & DWG D5374	

FOLIO REV: AA

DWG REV: A

2-DEBURR AS REQUIRED

110	QC2- Inspect parts off machine FAI/FAIB	0.00
-----	---	------

110		
QC	Memo	0.00
Quality Control		

20 0

DAS
45
9-89

2015-12-16

20 0

DAS
45
9-89

2015-12-16

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

Work Order ID 139980

139980

PRELIMINARY

Page 2

Wednesday, December 16, 2015 9:09:02 AM

Item ID: D5374-1

Accept

N900040100

Setup Start

NS1

Revision ID: PRELIM

Stop

NS2

Item Name: Bushing

Start Date: 12/16/2015 Start Qty: 20.00

20

Cust Item ID:

Required Date: 12/16/2015 Req'd Qty: 20.00

20

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC8- Inspect parts - second check	0.00							DAS 38 9-89 JAN 05 2016
120						(20)			
QC	Memo	0.01							
Quality Control									
130	Identify as per dwg & Stock Location: PRELIM	0.00							DAS 38 9-89 JAN 05 2016
130						(20)			
Packaging	Memo	0.00							
Packaging									
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.03							
Quality Control									

POSITIVE RECALL
DEC 16 2015
EFFECTIVE
RELEASED
AUTH MLJ
DATE 16-01-22
9-89

Rev A ECN16-510

JAN 22 2016

16-1-22

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QS1042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

Picklist Print

Wednesday, December 16, 2015 9:09:09 AM

Page 1

Work Order ID: 139980

139980

Parent Item: D5374-1

D5374-1

Parent Item Name: Bushing

Start Date: 12/16/2015

Required Date: 12/16/2015

Start Qty: 20.00

Required Qty: 20.00

Comments: IPP REV:A NEW ISSUE 15-12-10 JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M303R0.750		Purchased	No				f	56.9889		2.105263			

M303R0 750

**

303 Round Bar 0.750

Location

Loc Qty

Loc Code

MAT028

56.988921

m133699

56.988921

0.682

DAS
45 2015-12-16
9-89

DQA: _____ Date: _____



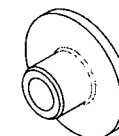
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

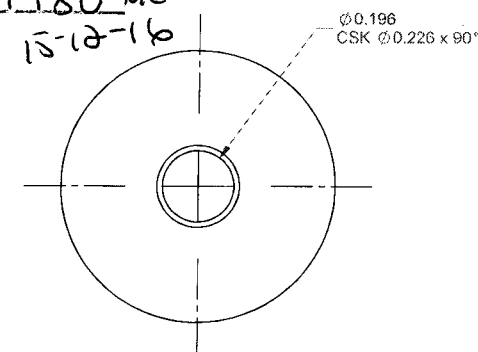
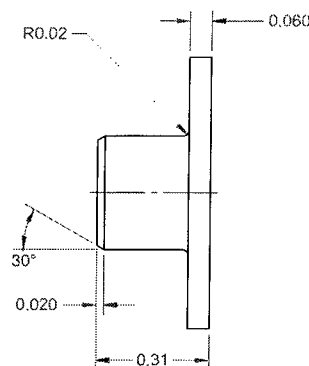
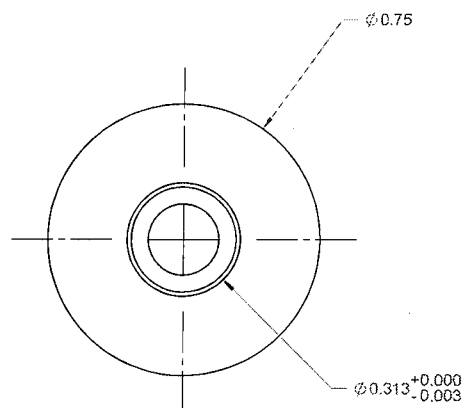
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐							
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval				
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval			
Root Cause		FAULT CATEGORY									
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :									
Misidentified ☐	Past Due ☐										

PRELIMINARY ISSUE



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. **139980** *mcj*
15-12-16



D5374-1 BUSHING

PRELIMINARY ISSUE

15.12.16 RF

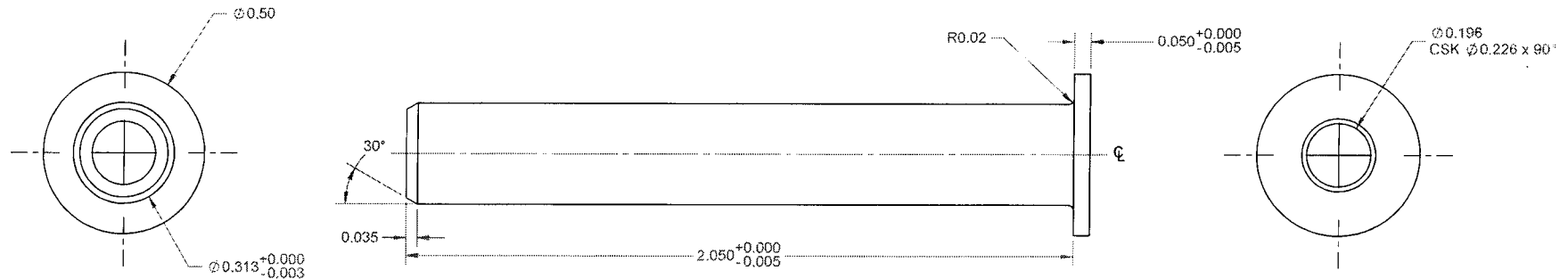
NOTES:

- 1) MATERIAL: AISI 303 SS ROUND BAR
ASTM A582
OR AISI 304/316 SS ROUND BAR
PER ASTM A276
REF DART SPEC M303R OR M304R
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.7
- 7) WEIGHT: 0.01 lbs

A	NEW ISSUE	RF	15.12.03
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	RF	EUGENE, OR	
CHECKED	AK	DRAWING NO.	REV. A
MFG. APPR.	JLM	D5374	SHEET 1 OF 2
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	BUSHING	NTS
DATE	15.12.03	COPYRIGHT © 2015 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR TRANSMITTED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

APPROVED

PRELIMINARY ISSUE



D5374-3 BUSHING

NOTES:

- 1) MATERIAL: AISI 303 SS ROUND BAR
ASTM A582
OR AISI 304/316 SS ROUND BAR
PER ASTM A276
REF DART SPEC M303R OR M304R
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.7
- 7) WEIGHT: 0.03 lbs

PRELIMINARY ISSUE

15.12.16 RF

APPROVED

DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	RF	EUGENE, OR	
CHECKED	AK	DRAWING NO.	REV. A
MFG. APPR.	JLM	D5374	SHEET 2 OF 2
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	BUSHING	NTS
DATE	15.12.03	COPYRIGHT © 2015 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

Purchase Order Receipt Listing

Page 1 of 2

Friday, November 27, 2015 10:20:26 AM

All amounts are calculated in domestic currency.

All Vendors PO ID PO30542 All Receipt Dates All Line Item Types
All Item ID/GL/WOs All Rec. Employees All Currencies
Grouped by Vendor ID

Purchase Order ID/ Curr Type	Line Nbr/ Insp Req	Project ID	Reference/ Description/ Cert Std	PO U/M/ Stock U/M	Required Date Required Qty	Recv Date/ Recv Emp	Recv Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty/ Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt
Vendor ID \ Vendor Name VC-COP001 Thyssenkrupp Materials CA Ltd											
PO30542	2		M303R0.375	f	11/30/2015	11/27/2015	12.0000	\$2.23	0.0000	0	\$26.77
CAD	No		303 Round Bar 0.375"	f	12.0000	DCUSER		\$26.77	0.0000	0	
			m133699								
	3		M303R0.750	f	11/30/2015	11/27/2015	96.0000	\$2.32	0.0000	0	\$222.47
	No		303 Round Bar 0.750"	f	96.0000	DCUSER		\$222.47	0.0000	0	
			m133699								
	4		M304R1.000	f	11/30/2015	11/27/2015	12.0000	\$4.38	0.0000	0	\$52.62
	No		304 round bar 1.00"	f	12.0000	DCUSER		\$52.62	0.0000	0	
			m133699								
	5		M6061T6B0.250X06.000	f	11/30/2015	11/27/2015	24.0000	\$2.95	0.0000	0	\$70.71
	No		6061-T6 Bar .250 x 6.00"	f	24.0000	DCUSER		\$70.71	0.0000	0	
			m133699								
	6		M6061T6B0.500X10.000	f	11/30/2015	11/27/2015	12.0000	\$9.73	0.0000	0	\$116.75
	No		6061-T6 Bar .500 x 10.00"	f	12.0000	DCUSER		\$116.75	0.0000	0	
			m133699								
	7		M6061T6B1.250X01.250	f	11/30/2015	11/27/2015	12.0000	\$3.01	0.0000	0	\$36.18
	No		6061-T6 Bar 1.25 x 1.25"	f	12.0000	DCUSER		\$36.18	0.0000	0	
			m133699								
	8		M6061T6B4.500X4.500	f	11/30/2015	11/27/2015	8.0000	\$48.94	0.0000	0	\$391.55
	No		6061-T6 Aluminum Bar 4.500" X 4.500"	f	8.0000	DCUSER		\$391.55	0.0000	0	
			m133699								

JC OARR

B I L L O F L A D I N G

Ship From:
THYSSENKRUPP MATERIALS NA
2821 LANGSTAFF ROAD
CONCORD, ONTARIO L4K 5C6
Tel: 905 669 9444 Fax: 905-738-9033

No: PEC 966164
Ship Date 26Nov15 at 11:31 From PFW
Probill
Via VIM DELIVERY
FOB CONCORD
Frt PREPAID
Route 0- 0 Manifest
Vhcle Trailer
Slp STAN IVERS (905-532-1350)
Sold To: (20115)
DART AEROSPACE
1270 ABERDEEN ST
HAWKESBURY, ON K6A 1K7

Ship To: (1)
DART AEROSPACE
1270 ABERDEEN ST
HAWKESBURY, ON K6A 1K7
Tel: 613-632-9577 Fax: 613-632-1053

B I L L O F L A D I N G

1) Our Order PEC-871532- 1 Your PO # 30542
STAINLESS STEEL ROUND BAR 303 STAINLESS
.375" DIA X 144.0000"

Heat Number Tag No
W2X1 478988

Quantity PCS Wt LBS
12 FT 1 5

MTR

2) Our Order PEC-871532- 2 Your PO # 30542
STAINLESS STEEL ROUND BAR 303 STAINLESS
.750" DIA X 144.0000"

Heat Number Tag No
V2P7 478989
V9E0 478990
Total:

Quantity PCS Wt LBS
84 FT 7 127
12 FT 1 19
96 FT 8 146

MTR

3) Our Order PEC-871532- 3 Your PO # 30542
STAINLESS STEEL ROUND BAR 304L
1.00" DIA X 144.0000"

Heat Number Tag No
W8L5 478991

Quantity PCS Wt LBS
12 FT 1 33

MTR

4) Our Order PEC-871532- 4 Your PO # 30542
ALUMINUM FLAT BAR 6061-T6511
.250" x 6.00" X 144.0000"

Heat Number Tag No
41087-050 478992

Quantity PCS Wt LBS
24 FT 2 42

MTR

5) Our Order PEC-871532- 5 Your PO # 30542
ALUMINUM FLT BAR ECONOPLT 6061-T6511
5.00" X 10.00" X 144.0000"

MTR

Page: 1Continued

SPB-27
785

TOUTES ERREURS ET/OU MARCHANDISES MANQUANTES DOIVENT ÊTRE
RAPPORTÉES IMMÉDIATEMENT

ERRORS OR SHORTAGE MUST BE REPORTED IMMEDIATELY

RETOUR DE MARCHANDISES AVEC NOTRE NUMÉRO D'APPROBATION SEULEMENT
MERCHANDISE MAY NOT BE RETURNED WITHOUT OUR APPROVAL NUMBER

REÇU EN BONNE CONDITIONS / RECEIVED IN GOOD CONDITION
VQ/QST# 1017327981 TQ001 TPS/GST TVH/HST # 140223934 RT0001

DATE

THYSSENKRUPP MATERIALS NA

DART AEROSPACE

STAINLESS STEEL ROUND BAR 303 STAINLESS

750" DIA X 144.0000"

PART NO.

PO/Ref 30542

We certify that this is a true copy of the report furnished by the producer of the metal, or data resulting from tests made in approved labs.

Certificate of Mill Test Results

BL PEC-966164-002

26Nov15

Pg 1/4

Signed by: 



METALLURGICAL TEST REPORT

North American Stainless Canada Inc.
740 Imperial Road North
Guelph, ON N1K1Z3
Canada

740 Imperial Road North

Certificate: 80687 7 Mail To:
THYSSENKRUPP MATERIALS
2821 LANGSTAFF ROAD
CONCORD, ON L4K5C6

Ship To:
THYSSENKRUPP MATERIALS
2821 LANGSTAFF ROAD
CONCORD, ON L4K5C6

Date: 7/28/2015 Page: 1

Steel: 303

Finish: CD

Corrosion:

Your Order: PEC268105

NAS Order: PN 0054556 04

PRODUCT DESCRIPTION:

Round Bar, Annealed, Cold Draw
ASTM A582/12 HN 10204 3.1, ASTM A484/11
AMS 5640U TYPE 1, Q35-764B CONDITION A
SOLUTION ANNEAL TEMP 1900F MIN

REMARKS:

COMPLIES W/REQUIREMENTS OF DEAR 252.225-7009 EU DIRECTIVE
2011/65/EU-ROHS. EAF+AOD+CC. NO WELD REPAIR. MELTED AND MFG
IN USA FREE FROM MERCURY AND LOW MELTING ALLOY CONTAMINATION

inf 15/11/30

Product Id	Skid #	Diameter	Size	Weight	Length	Mark	Pieces	Commodity Code
BH3396 2		7500		1.104	144.00	7	1	

CHEMICAL ANALYSIS

CM(Country of Melt) ES(Spain) US(United States) ZA(South Africa) JP(Japan)

Lab Accreditation Bureau, ISO/IEC 17025, Certificate# L2323
Chemical Analysis per ASTM A751/08

HEAT	CM	C %	CO %	CR %	CU %	MN %	MO %	N %	NI %	P %
V980	US	.0422	.2075	17.0435	.3085	1.8195	.3065	.0458	8.2410	.0285
		S %	SI %							
		.3515	.6015							

MECHANICAL PROPERTIES

Product Id	HB	2YS	UTS	RA	Elong
	No.	KSI	KSI	%	% 4D
BH3396 2	R L 197.0	85.05	111.10	51.00	42.60

NAS hereby certifies that the analysis on this certification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specifications stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written approval of NAS.

Technical
Dept. Mgr.

A. Brown

THYSSENKRUPP MATERIALS NA

DART AEROSPACE

STAINLESS STEEL ROUND BAR 303 STAINLESS

.750" DIA X 144.000"

PART NO.

PO/Ref 30542

We certify that this is a true copy of the report furnished by the producer of the metal, or data resulting from tests made in approved labs.

Signed by: 

Certificate of Mill Test Results

BL PEC-966164-002

26Nov15

Pg 2/4



METALLURGICAL TEST REPORT

North American Stainless Canada Inc.
740 Imperial Road North
Guelph, ON N1K1Z3
Canada

740 Imperial Road North

Certificate: 80687 8

Mail To:

THYSSENKRUPP MATERIALS
2821 LANGSTAFF ROAD
CONCORD, ON L4K5C6

Ship To:

THYSSENKRUPP MATERIALS
2821 LANGSTAFF ROAD
CONCORD, ON L4K5C6

Date: 7/28/2015 Page: 1

Steel: 303

Finish: CD

Corrosion:

Your Order: PEC268105

NAS Order: PN 0054556 04

PRODUCT DESCRIPTION:

ROUND BAR, Annealed, Cold Draw
ASTM A582/12 EN 10204 3.1, ASTM A484/11
AMS 5640U TYPE 1, QQS-764B CONDITION A
SOLUTION ANNEAL TEMP 1900F MIN

REMARKS:

COMPLIES W/REQUIREMENTS OF DPAR 252.225-7009 EU DIRECTIVE
2011/65/EU. ROHS. EAF+ACD+CC. NO WELD REPAIR. MELTED AND MFG
IN USA FREE FROM MERCURY AND LOW MELTING ALLOY CONTAMINATION

Product Id	Skid #	Diameter	Size	Weight	Length	Mark	Pieces	Commodity Code
BH3396 5		.7500		1.104	144.00	8	1	

CHEMICAL ANALYSIS

CM(Country of Melt)

ES(Spain)

US(United States)

ZA(South Africa)

JP(Japan)

Lab Accreditation Bureau, ISO/IEC 17025, Certificate# L2323

Chemical Analysis per ASTM A751/08

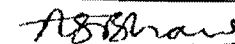
HEAT	CM	C %	CO %	CR %	CU %	MN %	MO %	N %	NI %	P %
V9E0	US	.0422	.2075	17.0435	.3085	1.8195	.3065	.0458	8.2410	.0285
		S %	SI %							
		.3515	.6015							

MECHANICAL PROPERTIES

Product Id	1 d	o i	HB	.2YS	UTS	RA	Elong
	c r	No.	KSI	KSI	%	% 4D	
BH3396 5	R L	197.0	85.05	111.10	51.00	42.60	

NAS hereby certifies that the analysis on this certification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specifications stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written approval of NAS.

Technical
Dept. Mgr.



THYSSENKRUPP MATERIALS NA

DART AEROSPACE

STAINLESS STEEL ROUND BAR 303 STAINLESS

750" DIA X 144.0000"

PART NO.

PO/Rel 30542

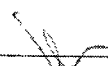
We certify that this is a true copy of the report furnished by the producer of the metal, or data resulting from tests made in approved labs.

Certificate of Mill Test Results

BL PEC-966164-002

26Nov15

Pg 3/4

Signed by: 



740 Imperial Road North

METALLURGICAL TEST REPORT

North American Stainless Canada Inc.
740 Imperial Road North
Guelph, ON N1K1Z3
Canada

Certificate: 80687 9

Mail To:

THYSSENKRUPP MATERIALS
2821 LANGSTAFF ROAD
CONCORD, ON L4K5C6

Ship To:

THYSSENKRUPP MATERIALS
2821 LANGSTAFF ROAD
CONCORD, ON L4K5C6

Date: 7/28/2015 Page: 1

Steel: 303

Finish: CD

Corrosion:

Your Order: PEC268105

NAS Order: PN 0054556 04

PRODUCT DESCRIPTION:

Round Bar, Annealed, Cold Draw
ASTM A582/13 EN 10204 3.1, ASTM A484/11
AMS 5640U TYPE 1, QQS-764B CONDITION A
SOLUTION ANNEAL TEMP 1900F MIN

REMARKS:

COMPLIES W/REQUIREMENTS OF DFAR 252.225-7009 EU DIRECTIVE
2011/65/EU, RoHS, EAF+AOD+CC. NO WELD REPAIR. MELTED AND MFG
IN USA FREE FROM MERCURY AND LOW MELTING ALLOY CONTAMINATION

OK 15/11/30

Product Id	Skid #	Diameter	Size	Weight	Length	Mark	Pieces	Commodity Code
BH3396 6		7500		1.104	144.00	9	1	

CHEMICAL ANALYSIS

CM(Country of Melt) ES(Spain) US(United States) ZA(South Africa) JP(Japan)

Lab Accreditation Bureau, ISO/IEC 17025, Certificate# L2323

Chemical Analysis per ASTM A751/08

HEAT	CM	C %	CO %	CR %	CU %	MN %	MO %	N %	NI %	P %
V920	US	.0422	.2075	17.0435	.3085	1.8195	.3065	.0458	8.2410	.0285
		S %	SI %							
		.3515	.6015							

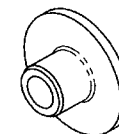
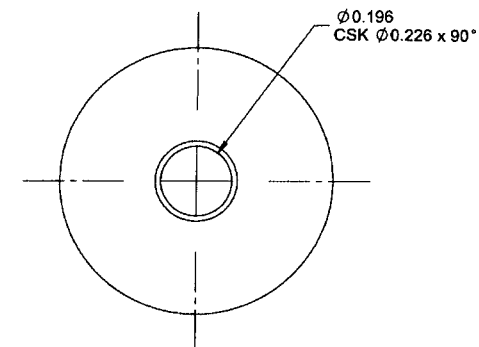
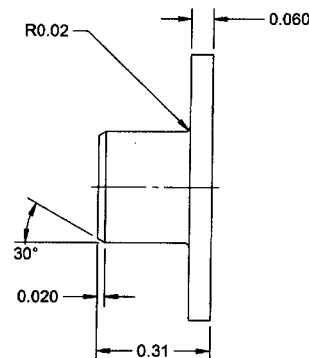
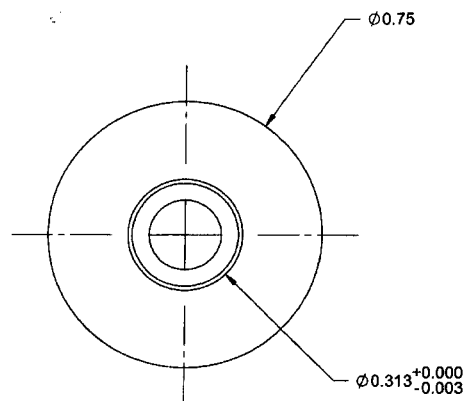
MECHANICAL PROPERTIES

Product Id	1 d	0 1	HE	.2YS	UTS	RA	Elong
			No.	KSI	KSI	%	% 4D
BH3396 6	R L		197.0	85.05	111.10	51.00	42.60

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Technical
Dept. Mgr.

ASB



D5374-1 BUSHING

NOTES:

- 1) MATERIAL: AISI 303 SS ROUND BAR
ASTM A582
OR AISI 304/316 SS ROUND BAR
PER ASTM A276
REF DART SPEC M303R OR M304R
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.7
- 7) WEIGHT: 0.01 lbs

RELEASED
2016-01-21
EUN 16-510

APPROVED

A NEW ISSUE		RF	15.12.03
REV.	DESCRIPTION		BY DATE
DESIGN	RF	DART AEROSPACE USA, INC. EUGENE, OR	
DRAWN	RF		
CHECKED	AK	DRAWING NO. D5374	REV. A
MFG. APPR.	JLM		SHEET 1 OF 2
APPROVED	HS	TITLE BUSHING	SCALE
DE APPR.	DS		NTS
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